DOCUMENT RESUME

ED 066 981 FL 003 506

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TITLE You Can't Learn without Goofing: An Analysis of Children's Second Language "Errors."
PUB DATE Jun 72
NOTE 46p.

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS Child Language; *Children; Contrastive Linguistics; *Educational Strategies; English (Second Language); *Error Patterns; Habit Formation; Interference (Language Learning); *Language Development; Language Research; Learning Theories; *Second Language Learning; Syntax; Tables (Data)

ABSTRACT

The types of syntactic errors made by children learning a second language provide insight into the way in which children acquire the second language. The contrastive analysis hypothesis states that while the child is learning a second language, he will tend to use his native language structures in his second language speech; where there are differences between the two languages, he will make mistakes. The L2=L1 acquisition hypothesis holds that children actively organize the L2 speech they hear and make generalizations about its structure as children learning their first language do. The mistakes expected in such a situation would be similar to those made by children learning that same language as their first language. Error analysis in terms of the two theories is discussed, and the authors present their own hypothesis for error explanation and language development. (VM)

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YOU CAN'T LEARN WITHOUT GOOFING

(An Analysis of Children's Second Language "Errors")

Heidi C. Dulay and Marina K. Burt

June, 1972

1.0 INTRODUCTION

Most parents who have lived abroad have marvelled at how easily their children pick up a foreign language, and perhaps have wondered about their child's unusual talent. Many children, without the benefit of formal classroom instruction, learn the language of a new country in the first year they are there. How do they do it?

This question encompasses all the aspects of language structure and all the subprocesses that comprise language acquisition. We will focus here on one modest facet of the general question -- the production of syntax in second language acquisition by children, from the viewpoint of "goofs" children make during the acquisition process.[1,2]

Before we proceed let us make these terms more explicit. By "second language acquisition" we mean the acquisition of another language after having acquired the basics of the first, whereas "bilingual acquisition"

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1. The relation between "production" and "comprehension" is still opaque to language acquisition researchers. We will thus make no assumptions about the relation and deal only with theories and data about children's speech, rather than about what they are capable of understanding.

2. We are aware of the importance of the influence of social factors and personal motivation on second language learning, but adequate treatment of those factors is also beyond the scope of this paper.

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is the acquisition of two languages simultaneously. The term "goof"[1] signifies deviation from syntactic structures which native adult speakers consider grammatically correct.[2,3]

We will consider two major hypotheses that differ both in the predictions they make about the types of production goofs in second language learning, and in the processes they posit to account for the goofs. They are:

i. the contrastive analysis hypothesis

ii. the L2 acquisition = L1 acquisition hypothesis

Briefly the contrastive analysis (CA) hypothesis states that while the child is learning a second language, he will tend to use his native language structures in his second language speech, and where structures in his first language (L1) and his second language (L2) differ, he will goof. For example, in Spanish, subjects are often dropped, so Spanish children learning English should tend to say Wants Miss Jones for Jose wants Miss Jones.

The L2 acquisition = L1 acquisition hypothesis holds that children

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1. Adopted from M.K. Burt and C. Kiparsky's The Gooficon: A Repair Manual for English (in press).

2. We spent many hours, with the help of S. Macdonald, A. Lipson and C. Cazden, searching for a term that would give the reader the connotation of this definition. In the end "goof" prevailed. The connotations of cuteness or ridicule which "goof" might evoke are not intended at all. It seems to us that those connotations are less detrimental than the feeling of blame or a vision of red marks on a composition that "error" and "mistake" might evoke. Other terms considered were "deviation" which is a negatively loaded term in social psychology and "ellipsis" whose mathematical definition connotes exactly what we want to say, but which has been used in linguistics to mean an abbreviated structure.

3. Throughout this paper goofs are marked with a #.

actively organize the L2 speech they hear and make generalizations about its structure as children learning their first language do. Therefore, the goofs expected in any particular L2 production would be similar to those made by children learning that same language as their first language. For example, Jose want Miss Jones would be expected, since first language acquisition studies have shown that children generally omit functors, in this case, the -s inflection for third person singular present indicative.

Each hypothesis contains two levels: the level of product and the level of process. The level of product describes the actual goof. For example, the CA hypothesis predicts that Spanish-speaking children will delete subjects, as in Wants Miss Jones, while the L2 acquisition = L1 acquisition hypothesis predicts that the children will omit functors, as in Jose want Miss Jones. The level of process, which is discussed in this paper in terms of "theoretical assumptions", accounts for the product — the CA hypothesis offers a transfer theory; the L2 acquisition = L1 acquisition hypothesis offers an active mental organization theory. Throughout this paper, the process-product distinction should be borne in mind.

We will discuss the assumptions (process level) of each hypothesis, describe their consequences in terms of predicted goofs (product), and cite empirical studies from a variety of languages[1] that bear on the issue. No study we know of analyzes children's ESL speech with the purpose of testing both the above two hypotheses. They will therefore be presented separately, and then a step toward a theory that would resolve the conflict will be proposed.

1. These studies include the learning of English by a Japanese child, by a Norwegian child, and by Spanish children; the learning of Spanish and French by American children; along with relevant adult studies.

2.0 THE CONTRASTIVE ANALYSIS HYPOTHESIS

2.1 Statement of the Hypothesis

The last two decades of enthusiasm for contrastive analysis in foreign language teaching can be traced to Charles Fries who, in 1945, wrote:

> The most effective materials are those that are based upon a scientific description of the language to be learned, carefully compared with a parallel description of the native language of the learner (p.9)

In 1957 Robert Lado worked out that suggestion in Linguistics Across Cultures which is now a classic in the field. The "fundamental assumption of the book" is the contrastive analysis hypothesis:

> that individuals tend to transfer the forms and meanings, and the distribution of forms and meanings of their native language and culture to the foreign language and culture, both productively when attempting to speak the language...and receptively when attempting to grasp and understand the language...as practiced by natives. (p.2) ...in the comparison between native and foreign language lies the key to ease or difficulty in foreign language learning. (p.1)

More recently, Charles Ferguson (in Stockwell and Bowen 1965 p.v), Robert Politzer (1967), and Leon Jakobovits (1970) reiterate the importance of L1 interference in L2 learning.[1]

Since Lado's treatise in 1957, the contrastive analysis hypothesis has swept the field like a tidal wave, although its strong version — that it can predict most of the errors a learner will make while learning a second language — is being toned down to the claim that it can account for

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1. See also Nickel and Wagner 1968; Banathy, Trager and Waddle 1966, Upshur 1962; Lane 1962; and the introduction to the Michigan Oral Language Series English Guide —Kindergarten 1970.

a great number of errors that L2 learners have actually made. (Wardaugh 1970 p.124) Though its impact on foreign language teaching has been felt by almost all concerned, the contrastive analysis claim still remains a hypothesis. Let us examine it more closely.

2.2 Theoretical Assumptions

The CA hypothesis rests on the following assumptions about the process of language learning[1]:

i. Language learning is habit formation.

ii. An old habit (that of using one's first language) hinders or facilitates the formation of a new habit (learning a second language) depending on the differences or similarities, respectively, between the old and the new.

The first assumption derives primarily from the general paradigm of behaviorist psychology[2]. Habit formation may be described in a variety of ways that all rely on the principles of Associationism, that is, frequency, contiguity, intensity, etc., of stimulus and response in the occurrence of the event that becomes a habit.

The second assumption, which follows from the first, derives from interference theory in verbal learning and memory research.[3] Interference theory until at least 1959[4] rested on the assumption of the association

1. See Fries's Foreword to Lado 1957, Lado 1957 pp.57-59, Upshur 1962 p.124, Lane 1962, Jakobovits 1970 pp.194-229, and Sapon 1971.
2. See especially Rivers 1964.
3. See Tulving and Madigan 1970 for a review of the field. See Postman 1961; Postman, Stark and Fraser 1968; Postman and Stark 1969 for full treatment of the theory.
4. The year of "Postman's optimistic assessment of the health of the [interference] theory...at a major verbal learning conference" (Tulving and Madigan 1970 p.470, referring to Postman 1961).

of context and/or stimulus with response. Learning a new response to the same stimulus and/or in the same context would require "extinction" of the old association. Otherwise, the old habit would prevail. The prevalence of an old habit in attempting to perform a new task is called "negative transfer".

Tulving and Madigan (1970) in reviewing the relevant literature from "350 B.C. to 1969" comment that psychologists are currently experiencing a "revolution in interference theory" (p.471) supported mainly by several studies which have seriously questioned the nature of the operation of transfer in paired-associate learning. For example, Slamecka (1968) found that part of a free-recall list does not facilitate the recall of the other part of the list; and Ceraso (1968a and 1968b) reported findings which were different from those predicted by the notion of extinction of specific A-B associations[1]. The explanation of transfer is based on the acceptance of learning as habit formation. Since habit formation is automatization of a response, it is theoretically impossible to get away from the necessity of unlearning as an intermediate step to new response acquisition. Thus, in spite of the findings that contradicted the predictions of the extinction notion, the notion of unlearning has been retained as part of the theory, but has been drastically revised.[2]

Tulving and Madigan summarize the revision:

> Rather than referring to the extinction of both specific (stimulus-term and response-term) and general (experimental context and specific response terms) associations, [unlearning] is now envisaged as a kind of suppression of the whole first-list repertoire of responses in the course

1. See also Slamecka 1969, Melton 1961 and 1967, and Hart 1967.
2. See Postman and Stark 1969; Postman, Stark and Fraser 1968.

> of second-list learning. During learning of the first list, the subject limits his response selection to those occurring in that list. When he comes to learn the second list containing different responses, new "criteria of selective arousal" must be established. These criteria require the suppression of the first list repertoire. When the subject is asked, immediately after learning the second list, to recall the first list, the selector mechanism cannot shift back to the criteria used during first list acquisition because of its "inertia". With the passage of time, however, the set to give second-list responses dissipates, resulting in the lifting of the suppression of the first-list responses and consequent observable "spontaneous recovery". (p.471)

At least at the moment, "suppression" seems to be an undefined construct that is entailed not by any part of the existing theory, but by the recent findings. Tulving and Madigan write that they "suspect it will be a few years before the new theory will acquire clearly identifiable properties and characteristics. In the meantime, interference phenomena will become fair game for heretics..." (p. 471)

Because the notion of unlearning is so central to interference theory, it seems surprising that second language learning theorists have relied so heavily on the theory; especially since the notion of extinction was still central to interference theory at the time of the debut of the contrastive analysis hypothesis via Lado's Linguistics Across Cultures (1957). To date, this theory is still used as the theoretical base for the CA hypothesis.[1] This is not an unreasonable development however, because the new developments in psychological theory are still considered radical.

It seems that L2 learning theorists, despite their stated theoretical base, were aware of the untenability of the extinction notion and subtlely

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1. See for example Sapon 1971, and Jakobovits 1970 pp.194-221.

substituted for it the notion of difficulty in L2 learning. See, for example, Lado's Section "4.2 Similarity and difference as determiners of ease and difficulty" (1957 p.59), and Marchese's "English Patterns Difficult for Native Spanish Speaking Students" (1970).[1] Clearly, no one would want to say that L1 has to be unlearned to learn L2, and once L2 is learned it would have to be unlearned when trying to speak L1, and so on. The predicted problem of first language loss is thus not addressed by CA proponents[2], but instead, the necessity of intensively drilling those aspects of the L2 that comprise the new habit is emphasized.

S.P. Corder has found another solution to the theoretical problems of the CA hypothesis. He has rejected the habit formation-negative transfer assumptions and instead has accepted the assumption of learner as a generator of generalizations about the target language (the hypothesis underlying L1 acquisition research). But Corder's substitution of one theoretical base for another apparently has not affected his belief in first language interference. According to Corder, the L2 learner need only hypothesize:

> Are the systems of the new language the same or different from the language I know? And if different, what is their nature? (1968 p.168)

"Evidence for this is that a large number, by no means all, of [the learner's] errors are related to the systems of his mother tongue." (Corder 1968 p.168)

In effect, though CA proponents seldom fail to state a theoretical base for their prediction of interference goofs, the nature of that base

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1. Italics are ours.
2. Some anthropological linguists do study the problem of ethnic language retention, however.

seems to make little difference in what they predict about a second language learner's goofs.[1]

2.3 Evidence

2.3.1 The Child-Adult Distinction in Language Acquisition

Before we discuss the evidence for the CA hypothesis, it is important to point out that a major issue in the field is the difference between children and adults in language acquisition. This difference has been extensively discussed by Lenneberg (1967) who draws on several areas of research to support the distinction. He reports that symptoms of traumatic aphasia ("direct, structural and local interference with neurophysiological processes of language", p.153) that occur under age 13 are reversible, whereas those that occur after 13 are not. Non-deaf children of deaf parents who are exposed to a normal language environment at school age learn to speak within a year; deaf persons who regain their hearing after puberty never master a spoken language. Lateralization of brain function around the age of puberty seems to be the physical correlate of these phenomena. After puberty the brain becomes, as it were, less plastic and therefore less able to take on certain kinds of new tasks (See Ch. 4).

Ervin-Tripp (1970) suggests a difference in approaches to L2 learning based on previous processing strategies. This results in grouping together adults who have already learned other languages, and children; as opposed to monolingual adults.

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1. The theoretical assumptions stated at the beginning of this section have been the subject of intense scholarly debate. We refer the reader to N. Chomsky 1964; Garrett and Fodor 1968; Bever 1968; Bever, Fodor and Garrett 1968; and Tulving and Madigan 1970.

> An adult who has changed his linguistic system only in minor ways - by adding new vocabulary, for example - for many years may not have available ready strategies for change. An adult who has already learned other languages, or a child who is constantly in the process of reorganizing his processing system and adding to his storage at all levels will have quite different approaches to new inp... The most adaptable, sensitive language learner we can find is a young child. Surely we can expect that his L2 learning will reflect many of the same processes of development as he used to discover his first language. On the other hand, in the case of inexperienced adults we can expect the system to be most adaptable just at the point where it changes most readily in adult life - the lexicon. (p.316)

J. Macnamara (1971), D.A. Reibel (1971), and before them H. Sweet (1899), O. Jespersen (1904) and H.E. Palmer (1922), remind us that they have seen adults perform as well as children in second language learning. Though a significant difference between children and adults is indicated by Lenneberg's research, Reibel points out that there have been no L2 acquisition studies that compare children and adults. In fact, no longitudinal studies of adult L2 acquisition have been made and child studies are just beginning to emerge.

The CA hypothesis does not address the child-adult distinction. ESL materials for children often include a list of "difficult" structures (Marchese 1970) or an "Interference Sheet" (Michigan Oral Language Series, Children's Guide-Kindergarten, 1971) which are enumerations of English structures that differ from the students' native language, and which the teachers are advised to drill intensively. However, the evidence cited by CA proponents is taken primarily from adult studies, especially those of U. Weinreich and E. Haugen. We discuss these in section 2.3.2 below. In 2.3.3 we present other types of evidence of adult L2 goofs used by CA proponents and, in addition, we offer findings from recent error analysis research on adult speech. In 2.3.4 we offer findings from child L2

acquisition research which also support the CA product prediction that L2 goofs reflect native language structure.

2.3.2 Weinreich and Haugen

The bulk of the supportive evidence cited by CA proponents is taken from Uriel Weinreich's work on Languages in Contact (1953) and Einar Haugen's two volume work on The Norwegian Language in America (1953). Lado writes:

> A practical confirmation of the validity of our assumption has come from the work of linguists who study the effect of close contact between languages in bilingual situations. Extensive studies have been carried out by Haugen and Weinreich in this area. (1957, p.1)

Indeed, Weinreich and Haugen document their work with study upon study of the speech of bilinguals. Upon closer examination, however, it becomes clear that the phenomenon of "interference" Weinreich has documented and that of "linguistic borrowing" that Haugen has documented are the same; and that this phenomenon is quite different from that of first language interference as conceived by CA proponents and described above. The differences are easily seen when we compare Weinreich and Haugen's definitions of interference, types of empirical evidence, functions of interference, and conditions for interference with those of the CA hypothesis.

Definition of Interference

Weinreich defines interference as follows: "...those instances of deviation from the norms of either language which occur in the speech of bilinguals as a result of their familiarity[1] with more than one language, i.e., as a result of languages in contact..." (p.1).

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1. Italics are ours.

Haugen defines linguistic borrowing as "...an example of cultural diffusion, the spread of an item of culture from people to people. Borrowing is linguistic diffusion, and can be unambiguously defined as the attempt by a speaker to reproduce in one language patterns which he has learned in another. (p.363) ...it is the language of the learner that is influenced, not the language he learns.[1] (p.370)

The CA hypothesis, on the other hand, states that interference is due to unfamiliarity with L2, i.e., to the learner's not having learned the target pattern, and is manifested in the language he learns.

> We know from the observation of many cases that the grammatical structure of the native language tends to be transferred to the foreign language... we have here the major source of difficulty or ease in learning the foreign language... Those structures that are different will be difficult. (Lado 1957 pp.58,59)

Further, Weinreich's definition of interference is not based on which language was learned first:

> Throughout the analysis of the forms of linguistic interference, conventional terms like "mother tongue", "first", "second", or "native" language were avoided; for from the structural point of view the genetic question...is irrelevant. (p.74)

On the contrary, the native-foreign language distinction is central to Lado's statement.

Types of Evidence

Weinreich's evidence comes from either the study of border and immigrant dialects or the evolution of languages, e.g.,

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1. Italics are ours.

German-English I come soon home.

Loss of the old French tense system in Creole (p.64)

and there are numerous others (see Ch. 2.3 Grammatical Interference).

Likewise, the data in Haugen's book (some 70 pages — see pp. 482-555) describes "the various dialects and communities" of Norwegians in America (p.481). Further, most of this data describes the borrowing of English into Norwegian and the Norwegianization of those borrowings, e.g.,

ke'ja kul'le (catch cold)
dres'sa opp (dress up) (pp.457-458)

This is the exact opposite of the interference phenomenon the CA hypothesis addresses, that is, the transfer of Norwegian patterns onto English. Haugen does cite three pages of goofs made by Norwegians speaking English. However, they are all either phonological or lexical,e.g.,

Oh, he is in the stove (Norwegian stova for living room)

Tendency to use the unvoiced correlates of [z] and [ž], as in [rōws+s] for roses and [pleš+r] for pleasure

In summary, while Haugen and Weinreich describe the languages and dialects of communities, the CA hypothesis refers to the speech of individuals "who do not usually form speech communities" (Nemser 1971, p.120) but whose goal is "to attempt to speak the language...as practiced by natives." (Lado 1957, p.2)

Functions of Interference

Weinreich stresses the intentional[1] use of interference structures by bilinguals. "As a mechanism for the reinforcement of expression, the transfer of morphemes flourishes where affective categories are concerned"

1. By "intentional" Weinreich apparently means that the speaker chooses one of two options available to him, i.e., he can use items he knows from two languages. Whether the choice is "conscious" or "unconscious" is not significant.

(p.34), e.g., diminutives that express endearment, like the Hebrew -le derived from Yiddish. He also reports that "in speaking to a unilingual, the bilingual often tends to limit interference and to eliminate even habitualized borrowings from his speech..."(p.81). Apparently, the bilinguals Weinreich refers to here know two codes — one that includes interference structures and one that does not. Furthermore, they are able to code-switch when the situation demands it.

Haugen also mentions the "deliberate use" by a bilingual of loan translations "for the sake of enriching his language" (p.459). (This seems similar to the notion of "foregrounding" suggested by Gumperz and Hernandez (in press) in their discussion of Chicanos speaking English.)

This use of interference structures is quite different from the CA notion of interference structures as unwanted forms which the L2 learner cannot help but use. The use of interference structures, according to Weinreich and Haugen, is motivated by social factors; in the CA framework it is uncontrollable because the L2 learner has not yet acquired the required L2 habits.

Conditions for Interference

Weinreich's observations of conversations between a bilingual and a monolingual, and between bilinguals, leads him to state that when both speakers are bilingual, interference runs rampant in both directions; when one speaker is monolingual and the other bilingual, interference in the bilingual's speech is "inhibited".

> When the other interlocutor is also bilingual, the requirements of intelligibility and status assertion are drastically reduced. Under such circumstances, there is hardly any limit to interference. (p.81)

Haugen writes:

> Linguistic borrowing...is something that has happened wherever there have been bilinguals. It is, in fact, unthinkable without the existence of bilinguals, and apparently inevitable where there is any considerable group of bilinguals. (p.263)

The CA notion of interference is predicted in quite different circumstances: the less of a bilingual the speaker is, the more interference there will be when he attempts to communicate with speakers of the target language.

In summary, it seems that the work of Weinreich and Haugen, although fundamental to research in language shift, does not speak to the phenomenon of first language interference that we and the CA proponents are concerned with.

What other evidence is there then?

2.3.3 Adult Studies

Jakobovits in his survey of foreign language learning issues (1970) declares that evidence for the assumption of transfer in L2 learning is lacking (see p.20). In discussing the CA hypothesis, Nemser (1971) writes, "Direct and systematic examination of learner speech has been largely neglected... Contrastive analysis specialists...have been content for the most part to derive empirical support for their formulations from impressionistic observation and intuition." (p.121). What evidence there is, which has made the hypothesis seem so intuitively plausible, apparently comes from personal recollection and teachers' accounts of foreigners' different accents in English. Wardaugh (1970) comments that many experienced teachers find themselves unable to reject

the CA hypothesis because their experience tells them that a Frenchman is likely to pronounce English think as sink and a Russian is likely to pronounce it as tink.

Most of the valid CA evidence seems to be phonological, and "studies of second language acquisition have tended to imply that contrastive analysis may be most predictive at the level of phonology, and least predictive at the syntactic level." (Richards 1970, p.2)[1]

That there may be some systematically collected evidence for syntactic goofs traceable to L1 is, paradoxically, brought to light by persons whose aim it is to show that other kinds of goofs should be given at least equal attention.

H.V. George (1972) in his book Common Errors in English notes that, from reviewing findings in his students' theses, two-thirds of the goofs collected could not be traced to L1 structure (i.e., one-third could be.)

D. Lance (1969) reports that one-third to two-thirds of his adult foreign students' English goofs were not traceable to their native Spanish. In her analysis of French-English goofs, Ervin-Tripp (1970) reaches a similar conclusion.

J. Richards (1971) mentions some examples of transfer goofs from his French-English data, but states that these are only a small portion of his data. He devotes his paper to discussing non-contra stive goof analysis,

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1. To do justice to this statement in any way would require an in-depth study of the phonological goofs, their level (deep or surface structure), and their relation to the syntax of the sentences of which these goofs are a part. In addition, the relationship between the phonological processing system and the syntactic processing system would have to be discussed. This is beyond the scope of this paper.

including performance goofs, overgeneralizations and so forth.

In the same paper, Richards gives an example of an English error a French speaker made which constitutes evidence against positive transfer:

#composed with (instead of composed of)

He remarks, "Had the French speaker followed the grammar of his mother tongue, he would have produced the correct English form"! (p. 16). Wolfe (1967) has more evidence for this phenomenon. There is no explanation for this goof type within the CA framework.

Other research on adult L2 goofs (Selinker 1971; Strevens 1969; Burt and Kiparsky in press) also focuses on non-contrastive goofs.

2.3.4. Child Studies

Though there are no goof analysis studies per se on child L2 speech, we have extracted what seems to be relevant information from studies by: Kinzel (reported by Ervin-Tripp 1970), Valette (1964) and Ravem (1968).

A six year old French child studied by Kinzel produced English pronouns that reflected French agreement rules:

#She is all mixed up. (pendule: feminine in French, neuter in English)

#I got her. (serviette: feminine in French, neuter in English)

#Who likes them? (epinards: count in French, mass in English)

(Ervin-Tripp 1970, p.330)

Valette (1964) incidentally reports that in her nine month observational study of L2 French development in a four year old American child, the only instance of English transfer was his consistent substitution of attendre pour for attendre in the sense of "to wait for". (No explanation or discussion of transfer is made in the paper.)

Interpretation of this data is premature since we have no data on French L1 acquisition and it is possible that children learning French as their native language also make those goofs.

Ravem (1968) documents L1 goofs in the English speech of his 6-1/2 year old Norwegian child which reflect Norwegian structure:

#Drive you car to-yesterday?

#Like you ice cream?

#Like you me not, Reidun?

This goof type occured before the child had acquired do. Ravem hypothesizes that the cue for English yes-no questions is do, which the child had not acquired, and since inverted word order is a frequent and important question cue in Norwegian, which does not have do, the child used the Norwegian question cue. Ravem also reports, however, that the child's goofs in his acquisition of negation and wh-questions were definitely not traceable to Norwegian. (This is discussed in 3.3.1 below.)

These three studies are the only child L2 studies we know of that present data that can be useful in our discussion.[1]

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1. We considered the study by Dato (1970) of American children learning Spanish in Madrid. He includes some samples of Spanish L2 speech that reflect English structure, but each of these samples might also reflect Spanish L1 developmental goofs. In the absence of Spanish L1 acquisition data, there is no way to accurately categorize Dato's data. For example, #grande oreja ("big ear") shows wrong adjective placement: in Spanish most adjectives follow the noun they modify, except for a few which may precede the noun . Adjectives which may appear before the noun may also appear after it, with a different meaning. On the other hand, in English adjectives precede nouns they modify (green hat). Though the above goof does reflect the child's L1 (English), we do not know whether in Spanish L1 acquisition children use one adjective position before another. It is interesting in Dato's published data on the acquisition of the nounphrase, the adjective position goof made was always with grande. Grande is one of the few adjectives in Spanish that is used both before and after the noun, with a different meaning for each position.

Valid evidence from the adult and child studies presented above shows that a portion of L2 goofs do reflect L1 structure, confirming in part the product level of the CA hypothesis. However, because a major portion of L2 goofs do not reflect L1 structure, this partial confirmation of the CA product level is not enough to justify the process level which is questionable on theoretical grounds.

2.4 State of the Contrastive Analysis Hypothesis

The CA hypothesis in 1972 has come under a good deal of criticism, though no one has rejected it entirely. Many teachers accept it but consider its pedagogical use minimal. Many L2 acquisition theorists have reservations about it[1], though they seem willing to salvage it, if only partially.

At the product level, the CA hypothesis accounts for a portion of the evidence: that presented by recent goof analysis research on adult L2 syntactic goofs, and that which we have found in three child L2 acquisition studies. It does not account for a major portion of adult L2 syntactic goofs or for the child L2 goofs presented in the next section.

At the process level, the CA hypothesis runs into difficulty —

i. The theoretical base of the hypothesis, which lies in psychological interference theory, is being seriously questioned, if not by L2 acquisition theorists, by psychologists of verbal learning and memory. (See section 2.2 above.)

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1. These reservations are mostly methodological. The linguistic apparatus necessary to make valid comparisons between languages is still being developed. "Contrastive analysis has not yet overcome its teething troubles and is still lacking sound theoretical foundations (Nickel and Wagner 1968 p.255). See also Wardaugh 1970 and Richards 1971.

ii. There is evidence against positive transfer. (See p.17)
If it is true that L2 learners make goofs in L2 that would have been avoided had they followed the rules of L1, the question is raised as to whether negative transfer can be used as an underlying principle that can explain and predict L2 goofs.

iii. The use of Weinreich and Haugen's work as "practical confirmation" of the hypothesis is invalid. (See section 2.3.2 above.)

Most of the studies on children's second language acquisition do not speculate about first language interference. They are concerned with the equally compelling other end of the spectrum — that L2 acquisition = L1 acquisition.

3.0 THE L2 ACQUISITION = L1 ACQUISITION HYPOTHESIS

3.1 Statement of the Hypothesis

With the burst of first language acquisition research in the 60's has come a new interest in second language learning research — that of comparing L2 syntactic development in children with native language acquisition findings. A statement from Dato (1970) sets the scene:

> ..encouraging results in the search for universals in native language development have led us to explore the existence of similar phenomena in the learning of a second language. (p.1)

The general hypothesis has been differentiated thus far into three specific hypotheses:

i. L2 syntactic development is characterized by a learning sequence in which "base structures" are learned first, then increasingly

"transformed structures" are acquired. (Dato 1970)[1]

ii. The strategies of L2 acquisition are similar to those of L1 acquisition, e.g., use of word order as the first syntactic rule, omission of functors (Dulay and Burt 1972).

iii. The L2 learning sequence of certain syntactic structures is similar to corresponding L1 syntactic development. So far, the structures studied include wh-questions (Ravem 1970), yes-no questions (Ravem 1968), negation (Milon 1972 and Ravem 1968), and plural formation (Natalicio and Natalicio 1971).

These hypotheses, interesting as they are, span more than we can deal with here. Staying with our plan to discuss only the production of L2 syntax from the point of view of goofs children make, the L2 acquisition = L1 acquisition hypothesis, which is stated in two parts is as follows:

i. Children below the age of puberty will make goofs in L2 syntax that are similar to L1 developmental goofs.

An example of this is the omission of functors which results in a number of specific syntactically unrelated goofs: lack of agreement, lack of tensing, missing determiners, missing possessive markers.

ii. Children below the age of puberty will not make goofs that reflect transfer of the structure of their L1 onto the L2 they are learning.

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1. It is difficult to ascertain what Dato means by "transformational model" or "base structures". He writes, "our findings indicate that transformational processes as reflected in the utterances of our subjects do indeed have some psychological reality", but he does not compare his descriptions of the intermediate developmental steps with actual generative grammar transformations. He has found though, general trends of increasing complexity across subjects, based on his description of the structures acquired by his subjects.

For example, Samoan children should not tend to use Samoan word order in possessive NP constructions (the reverse of English word order) when they are learning English.

3.2 Theoretical Assumptions

Proponents of the L1 acquisition = L2 acquisition theory do not spell out their theoretical assumptions. There is usually a paragraph or two rejecting habit theory and affirming that language learning is an "active" and "creative" process. Reference is usually made to Noam Chomsky's work and that of Roger Brown, Dan Slobin and their colleagues. The apparent hesitance in spelling out theoretical assumptions may be due to the current state of uncertainty in the field. Ravem takes pains to say, "the study reported here was not undertaken to test any particular hypothesis relating to certain theories of language learning." (1968 p.184).

Since we are examining all aspects of the hypothesis, we will attempt to make explicit the assumptions on which the hypothesis must rest:

i. The language learner possesses a specific type of innate mental organization which causes him to use a limited class of processing strategies to produce utterances in a language.

ii. Language learning proceeds by the learner's exercise of those processing strategies in the form of linguistic rules which he gradually adjusts as he organizes more and more of the particular language he hears.

One such strategy might be the use of a syntactic rule with a minimum of grammatical redundancy, e.g., word order to express the possessor-possessed relation (#Daddy dog for "Daddy's dog"). In no case would this

relation be expressed in English as Dog Daddy.

iii. This process is guided in L1 acquisition by the particular form of the L1 system, and in L2 acquisition by the particular form of the L2 system.

For example, the strategy of using word order to indicate possession is different in English and Samoan. "In English...the relation of possession is expressed by naming first the person who possesses and second the object possessed. In Samoan, the order is just the reverse. In both languages adults mark the construction with grammatical forms as well as word order. Stage I children, whether English-speaking or Samoan-speaking, drop the grammatical form. If English-speaking they use the order Possessor-Possessed, and if Samoan-speaking, the reverse." (Cazden and Brown, in press, p.5)

The present focus of linguistic research is to formulate those principles that generate all and only grammatical sentences. The focus of psychological research is to discover those principles which a learner uses to arrive at the production of grammatical speech. Psycholinguistic language learning strategies appear to be a function of the interplay between linguistic complexity and learning complexity. Some researchers, like Dato, pursue the linguistic complexity factor; some, like Bever in first language acquisition, pursue the learning complexity factor. We are all, in one way or another grappling with the problem that Charles S. Peirce (1957) stressed in his lecture on the "logic of abduction" — that of searching for the rules of mental organization that limit the class of possible hypotheses a child uses when learning a language.

3.3 Evidence

The first part of the hypothesis — that children below the age of puberty will make goofs in L2 syntax that are similar to L1 developmental goofs — has been shown for three syntactic structures: wh-questions (Ravem 1970), negation (Milon 1972, and Ravem 1968), and plurals (Natalicio and Natalicio 1971). In each case English L1 studies have produced clear findings, making the comparison straightforward.

The second part of the hypothesis — that children below the age of puberty will not make L2 syntax goofs that reflect their native syntactic structures - has been shown for the following structures: English-Welsh word order in adjective and possessive NP constructions (Price 1968), Norwegian-English wh-questions (Ravem 1970), and Norwegian-English negation (Ravem 1968). Our additional comparison of Japanese negation to Milon's (1972) English L2 data, and of Spanish pluralization to Natalicio and Natalicio's (1971) English L2 data, also confirms this part of the hypothesis for Japanese-English negation and Spanish-English pluralization.

3.3.1 Wh-Questions

R. Ravem (1970) conducted a five month study of his 6-1/2 year old Norwegian speaking son Rune, using spontaneous speech taperecording plus a translation technique. The main objective of his study was to test the derivational complexity hypothesis in Wh-questions. He found, as did Brown's group (1968) that based on the following rough transformational sequence

Base	? John will read the book tomorrow
T-1	John will read the book when?
T-2	When John will read the book?
T-3	When will John read the book?

the child produced T-2 type goofs before acquiring the final wh- form. The children's wh- goof structure can be described as:

S → wh- + (not) + NP + VP

L1 (Adam)	L2 (Rune)
#What the dollie have?	#What you eating?
#Why not me sleeping?	#Why not me can't dance?
#How he can be a doctor?	#What she is doing?

Briefly, the goof is the absence of the obligatory inversion of aux and subject required by English. Ravem mentions that this is definitely not Norwegian interference as Norwegian requires verb-subject inversion when modal auxiliaries are absent, e.g., What saying you? for "What are you saying?"

3.3.2 Negation

In his six month study of a seven year old Japanese child (Ken) learning Hawaiian English, John Milon (1972) reports that the types of negative utterances Ken produced were similar to those produced by Adam, Eve and Sarah in their first two stages[1] (as reported by Klima and Bellugi 1966). 244 negative utterances were extracted from eight hours of video-taperecordings of 20-minute weekly sessions. His findings are juxtaposed to Klima & Bellugi's findings.

	L1 (Adam, Eve and Sarah)	L2 (Ken)
Stage 1:	S → {no / not} + Nucleus, or Nuc → {+ no / not}	S → {no / not} + Nucleus
	#No wipe finger	#Not me.
	#Not a teddy bear.	#Not dog.
	#Wear mitten no.	#Not cold.[2]

1. Milon has not completed his analysis of Ken's Stage 3.

2. The two apparent differences are: i) Ken's utterances as cited in Milon's paper consist of two words, while those of Adam, Eve and Sarah consist of three and four words; ii) Ken's utterances do not include the structure [Nucleus + Neg], while those of Adam, et al. do.

Stage 2:	$S \rightarrow$ Nom. + Aux^{neg} + $\begin{cases}\text{Pred}\\ \text{Main V}\end{cases}$	$S \rightarrow$ Nominal + Aux^{neg} + Pred
	$Aux^{neg} \rightarrow \begin{cases}\text{neg}\\ V^{neg}\end{cases}$	$Aux^{neg} \rightarrow \begin{cases}\text{neg}\\ V^{neg}\end{cases}$
	$Neg \rightarrow \begin{cases}\text{no}\\ \text{not}\end{cases}$	$Neg \rightarrow \begin{cases}\text{no}\\ \text{not}\\ \text{no more}\end{cases}$
	$V^{neg} \rightarrow \begin{cases}\text{can't}\\ \text{don't}\end{cases}$	$V^{neg} \rightarrow \begin{cases}\text{no can}\\ \text{don't}\end{cases}$
	#I don't sit on Cromer coffee.	Don't tell teacher OK?
	#He not little, he big.	#I no queen.
	#He no bite you.	#I not give you candy.
		#I no more five.

Briefly, stage 1 places the Neg outside the nucleus; stage 2 places the Neg between the NP and the VP.

Though Milon did not mention the Japanese negation structure, it is in fact different from Ken's structures.Negation in Japanese is a bound morpheme, always attached to the right of the verb stem. Moreover, verbs appear at the end ot the sentence.[1] Word order in a Japanese negative sentence would be, for example:

His red shirt+case inflection like+Neg inflection

as opposed to English:

I do not like his red shirt.

Thus, Milon's data shows that Japanese structure is not transferred onto the English negative structures Ken produced, which placed no and not before the nucleus. Furthermore, in Stage 2 examples, the verb final Japanese word order is not produced.

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1. See E. Jordan 1971.

Ravem (1968) has similar evidence based on a partial analysis of his data. His son Rune did not produce the Norwegian structure N + V + (N) + Neg, as in:

Han arbeider ikke (He works not)
Vi tok det ikke (We took it not).

Instead, he produced the English L1 acquisition structure N + Neg + VP, as in:

#I not like that.
#I not looking for edge. (p.180)

3.3.3 Plurals

Natalicio and Natalicio (1971) add to our store with their study of the acquisition of English plurals by native Spanish children in Grades 1, 2, 3 and 10. They studied 144 males, 36 in each grade, half native English speakers and half native Spanish speakers, using a test similar to the Berko (1958) "wug" test. They found that both the native Spanish and the native English speakers acquired the /-s/ and /-z/ plural allomorphs before the /-iz/, (Berko 1958, and Anisfeld and Tucker 1967) though the mean proportion of overall correct responses for native Spanish speakers was lower.

This order of acquisition shows that Spanish L1 structures are not transferred to English L2 speech. Spanish pluralization rules are as follows:

V#[1] + /s/
C# + /es/[2] (Da Silva 1963, p.17),

i.e., words that end in vowels are pluralized by adding /s/; words that

1. # here is the linguistic symbol for "word boundary".
2. The third rule – z# + ces (z→c) which is included in most grammar books is omitted because it is phonetically equivalent to the second rule and applies only to spelling.

end in consonants add /es/. If transfer from Spanish to English had been operating, the order of acquisition would have been:

/s/ only first,

then /z/ and /iz/ together

because Spanish plurals are all voiceless, and voicing is the new feature English requires.

3.3.4 Word Order in Adjective and Possessive NP Constructions

In his six month study of the acquisition of Welsh by 21 native English-speaking children, Price (1968) reports that the Welsh NP constructions produced by the children reflected Welsh rather than English word order, i.e., they reflected L2 structure rather than L1 structure. The data was collected daily by a classroom observer-teacher who took written notes of the children's utterances at various times during the day. The following table gives Price's striking findings.(p.42)

WELSH (L2)

Pattern	Actual Utterance	English Equivalent[1]
N + Adj	blodyn coch	flower red
N + Adj + Adj	cyw bach melyn	chick little yellow
Poss'd + Poss'r	esgidiau Dadi	shoes Daddy
Poss'd + Adj + Poss'r	blodyn gwyn Karen	flower white Karen
Poss'd + Det + Poss'r	cadair y babi	chair the baby

ENGLISH (L1)

Pattern	Example
Adj + N	a red flower
Adj + Adj + N	a little, yellow chick
Poss'r + Poss'd	Daddy's shoes
Poss'r + Adj + Poss'd	Karen's white flower
Det + Poss'r + Poss'd	the baby's chair

1. English translation is ours.

Unfortunately, in this paper Price did not compare Welsh L1 acquisition to the Welsh L2 structures produced by the English-speaking children; so, this evidence does not speak directly to the first part of the hypothesis.

3.4 State of the L2 Acquisition = L1 Acquisition Hypothesis

The L2 acquisition = L1 acquisition hypothesis as stated in studies to date, explicitly refers only to the product level. At this level, the available evidence, discussed above, confirms the hypothesis for children's production of wh-questions, negation, plurals, and word order in NP constructions.

With this empirical confirmation of the hypothesis, its theoretical assumptions receive support, at the same time making contrastive analysis theoretical assumptions even less tenable.

However, two weaknesses emerge:

i. What can we say about those structures which have no corresponding L1 data analysis for comparison? Nothing, except suggest the task for "future research".

ii. There is evidence for interference structures, e.g., Ravem's findings in yes-no question formation by a Norwegian child learning English. To account for this, one might make the weak argument that because of the limitations of natural data collection, utterances reflecting, say, subject-verb inversion in yes-no questions might have been made by Adam, Eve and Sarah when Brown and his colleagues were not there to collect them.

We would like to make a stronger argument, though, that would require finding an explanation that accounts for both interference-like

goofs and non-interference goofs, and that would thus address the process level of children's L2 acquisition.

4.0 PROPOSED SECOND LANGUAGE PRODUCTION STRATEGIES

> While much of the value of scientific hypotheses lies precisely in their power to yield new and interesting empirically testable consequences, their ultimate virtue, to the extent that they are true, is that they explain known or knowable facts by revealing them to be consequences of underlying principles of great generality. A scientific description therefore cannot stop with a systematic account of observable phenomena but must seek a theory that purports to explain the phenomena, as well as to display them. It is this explanatory goal of science that we have sought to attain in our account. (Halle and Keyser 1971 p.xiii)

It is this explanatory goal that guides our efforts, rudimentary though they may be at the present time.

4.1 Statement of the Hypothesis

We have presented two conflicting theories, each of which has attempted to explain part of the data. Neither as it stands can explain all of the data. Our account will attempt to do so. It relies on the theoretical assumptions we suggested as the base for the L2 acquisition = L1 acquisition hypothesis. We hypothesize that the child's organization of L2 does not include transfer from (either positive or negative) or comparison with his native language, but relies on his dealing with L2 syntax as a system. Within this framework of process, we propose to explain the interference-like goofs presented below, as well as some of those interference-like goofs which have been presented in section 2.3.4 above.

This account requires that the goofs be accurately categorizable in the following framework:

i. Interference-like Goofs — those that reflect native language structure, and are not found in L1 acquisition data of the target language.

For example, #hers pajamas produced by a Spanish child reflects Spanish structure, and was not produced by Adam, Eve or Sarah.

ii. L1 Developmental Goofs — those that do not reflect native language structure, but are found in L1 acquisition data of the target language.

For example, #He took her teeths off produced by a Spanish child does not reflect Spanish structure, but an overgeneralization typically produced by children acquiring English as their first language.

iii. Ambiguous Goofs — those that can be categorized as either Interference-like Goofs or L1 Developmental Goofs.

For example, #Terina not can go produced by a Spanish child reflects Spanish structure and is also typical of American children learning English as their native language.

iv. Unique Goofs — those that do not reflect L1 structure, and are also not found in L1 acquisition data of the target language.

For example, #He name is Victor produced by a Spanish child neither reflects Spanish structure nor is found in L1 acquisition data in English.

4.2 Goof Analysis

4.2.1 Data

Of the child L2 data presented above (section 2.3.4), only Ravem's data on yes-no questions can be categorized in our framework.

In addition, we have some pilot data of English L2 speech of native Spanish-speaking children taperecorded by an ESL teacher during free conversation in her first grade ESL class. We also have data collected by G. Williams (1971) during his English conversations with native Spanish-speaking first grade children. Tables 1-4 present all the goof types in the data, along with an example of each type.

Table 1

INTERFERENCE-LIKE GOOFS

GOOF TYPE	GOOF
SPANISH-ENGLISH	
Poss Pro + N number agreement not allowed in English, obligatory in Spanish	# Now she's putting hers clothes on.
Omission of obligatory how in English, optional in Spanish	# I know to do all that.
Use of infinitive for gerund not allowed in English, obligatory in Spanish	# I finish to watch TV when it's four o'clock.
NORWEGIAN-ENGLISH	
Verb-subject inversion not allowed in English, obligatory in Norwegian	# Like you me not, Reidun?

Table 2

L1 DEVELOPMENTAL GOOFS

GOOF TYPE	GOOF
SPANISH-ENGLISH	
Irregular plural treated as regular	# He took her teeths off.
Two verbal words tensed; only one required	# I didn't weared any hat.
Accusative Pro for Nominative	# Me need crayons now.
Inappropriate Q form: no aux-NP inversion	# What color it is?
Masc Pro used for Fem	# He didn't come yesterday (answering question about a little girl)
Do-subject agreement missing	# Where does the spiders go?
N-Pro agreement missing	# They-re painting his faces (their).
Obj Pro missing	# My mother can fix.
Tense inflection missing	# He say he bring it to school.
Determiner missing	# He say his father buy him car.

Table 3

AMBIGUOUS GOOFS

GOOF TYPE	GOOF
SPANISH-ENGLISH	
Wrong no placement; no/not distinction; do missing (similar to L1 English acquisition in Klima & Bellugi Stage 2, but also obligatory in Spanish	# He no wanna go. # It no cause too much trouble. # He look like a glass, but no is a glass.

Table 4

UNIQUE GOOFS

GOOF TYPE	GOOF
SPANISH-ENGLISH Use of Nom for Poss Pro	# She name is Maria.
Overuse of do	# We do got no more book.
Count/mass distinction not expressed correctly	# He got a toys. # He got a little bit page (left).
-ing with a modal not allowed	# Now we will talking about...
Using simple sentence structure in embedded sentence	# I don't know what's that.

4.2.2 Analysis

The data we have was not systematically collected; therefore, a frequency count is not appropriate. There were, however, few interference-like goofs relative to the number of non-interference goofs.

As stated in 4.1, our account of L2 syntactic goofs will rely on the general processing strategies we posited as the theoretical assumptions for the L2 acquisition = L1 acquisition hypothesis. Further, in the absence of comprehensive L2 acquisition research and within the framework of this paper, it is not possible to go much beyond L1 acquisition findings, except for speculations which we take the liberty to present in the final section. Therefore, an explanation of the Unique Goofs listed in Table 4 must await more systematic L2 acquisition research. The Ambiguous Goofs in Table 3 can be explained by both the CA hypothesis and the L2 acquisition = L1 acquisition hypothesis; therefore, they cannot be used as decisive evidence for either. The L1 Developmental Goofs in Table 2 are clearly

accounted for by only the L2 acquisition = L1 acquisition hypothesis; therefore, they can be used to confirm it and need not be discussed further. We are thus left with the Interference-like Goofs, which, although they appear to confirm the transfer process posited by the CA hypothesis, are, we think, explainable within the L2 acquisition = L1 acquisition framework. It is this explanation that is presented in this section, namely, that the Interference-like Goofs reflect a strategy similar to one used by children acquiring English as their native language.

L1 learners "...'iron out' or correct irregularit[ies] of the language, and incidentally reveal to us the fact that what they are learning is general rules of construction — not just the words and phrases they hear." (Cazden and Brown in press, pp.2-3). For example, children use the past tense inflection (-ed) for irregular verbs, such as #goed and #runned for went and ran. These have been called "overgeneralizations". The explanations offered below are instances of various types of overgeneralization. The specific types of overgeneralizations discussed below have not been found in L1 acquisition data. So in a sense, we have now put specific L1 acquisition structures aside but have retained L1 processing strategies in our explanation of L2 syntactic goofs.

Spanish-English Interference-like Goofs

Now she's putting hers clothes on.
She putting hers pajamas on.
She's gonna brush hers teeths.

These goofs look like they reflect modifier-noun number agreement, obligatory in Spanish but not existent in English. However, it is not unreasonable to hypothesize that these are instances of overgeneralizing the

possessive -s from NP's which are nouns, e.g., Tim's, Mary's. (This specific overgeneralization does not appear in English L1 acquisition data, but is consistent with the general strategy.) It is also quite possible that the child was overgeneralizing from the structure [NP is X's], e.g., It's hers, ...Tim's, etc., which is a very common structure of English.

We did not find bigs houses, talls boys, etc. which could not have been an English overgeneralization and thus would have been a clear case of Spanish interference. (This is predicted by Stockwell, Bowen and Martin (1965).

I know to do all that.
I finish to watch TV when it's 4 o'clock.

These too, reflect typical Spanish complement structures.

However, the structure is also typical of English. Replacing know and finish with want, whose frequency of occurence is undisputed, would yield a structure children produce regularly, e.g., I want to go to Grandma's.

Norwegian-English Interference-like Goofs

Drive you car to-yesterday?
Like you ice cream?
Like you me not, Reidun?

These goofs accurately reflect Norwegian structure (see p.31 above) and usually not American English. However, these children were exposed to English in England, where the verb have is permuted: Has he a job?, Have you a cold? Since have is also a verb of very high frequency with

children as well as adults, we hypothesize here the generalization of Have + NP.....? to other verbs. This goof did not appear in L1 acquisition data, perhaps because the children studied were American and there is less possibility of being exposed to the structure Have + Subj + Obj in the United States.[1]

4.3 Speculations

The formulation of specific types of production strategies in L2 aquisition has barely begun, so thatwe can only indicate the direction we hope to pursue. The theoretical assumptions outlined above (pp.26-28) comprise the starting point and framework forour research efforts. L1 acquisition research provides support and direction. Our next research task, which will include systematic data collection of the speech of two six year old Spanish-speaking children learning English, will provide an empirical test forour hypotheses.

So far we are considering the following criteria as a point of departure for the formulation of hypotheses about children's production strategies in L2 acquisition. Each criterion is followed by a hypothesis.

i. a rule's utility for rich expression with a minimum of grammatical redundancy

e.g., word order

Word order alone is sufficient to express the basic semantic relations:

1. There is disagreement among informants here, as some speakers of American English consider both versions normal. Perhaps we can only speculate that the Have + NP...? structure is more commonly used in British English than in American English, and that Rune's parents used it whereas Adam, Eve and Sarah's perents did not.

agent-action-object, genitive, possessive, locative, negation, etc., as in #Daddy dog for "Daddy's dog". This has been demonstrated by analysis of children's telegraphese in their native language (Brown 1971, Bloom 1970), and by adult telegrams.

In L2 production, word order is used to produce not only simple sentences like those in L1, but also complex sentences relatively early, long before the functors within clauses are acquired, e.g., He say he bring it to school.

e.g., a rule using a minimal number of cues to signal the speaker's semantic intention

Intonation is used alone in the beginning to signal questions. When the wh- words are learned, they are used without the additional obligatory aux-subject inversion, which is in fact redundant. In if-then clauses, the obligatory congruence of tenses, e.g., present in the if clause, future in the then clause, is omitted.

We predict that this type of rule will be used earliest and will result in missing functors and missing transformations.

ii. the pervasiveness of a syntactic generalization

e.g., the Principle of Transformational Cycle

The Principle of the Transformational Cycle roughly means that certain rules apply to several clauses within a complex sentence in the same way that it applies to a simple sentence, e.g., number agreement, agent deletion, reflexive, there-insertion. But, for some sentence types this principle is obligatorily violated, such as in indirect questions where the simple sentence question formation rule does not apply to an embedded

question. We don't say:

I asked him when would he come.

Instead we say:

I asked him when he would come.

We predict that if a pervasive principle has been acquired, its use in structures where its violation is obligatory will result in goofs of the type mentioned above.

iii. Frequency of a lexical item in the child's speech that entails a specific syntactic structure

e.g., want, which entails an infinitive complement (M.K. Burt and C. Kiparsky in press)

This example was discussed in our explanation of the interference-like goofs in our Spanish-English data, p.43 above.

e.g., have, which in British English entails verb-subject inversion in yes-no questions

This example was discussed in our explanation of the interference-like goofs in Ravem's Norwegian-English data.

We predict that if a child uses a lexical item frequently, he will tend to use the syntactic structure required by it for lexical items which belong to the same form class but which require a different structure.

Much more data will have to be examined in order to formulate these hypotheses more precisely, to find other production strategies, and perhaps to find their respective places in the scheme of second language acquisition.

. For details see M.K. Burt 1971 pp. 157-164.

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